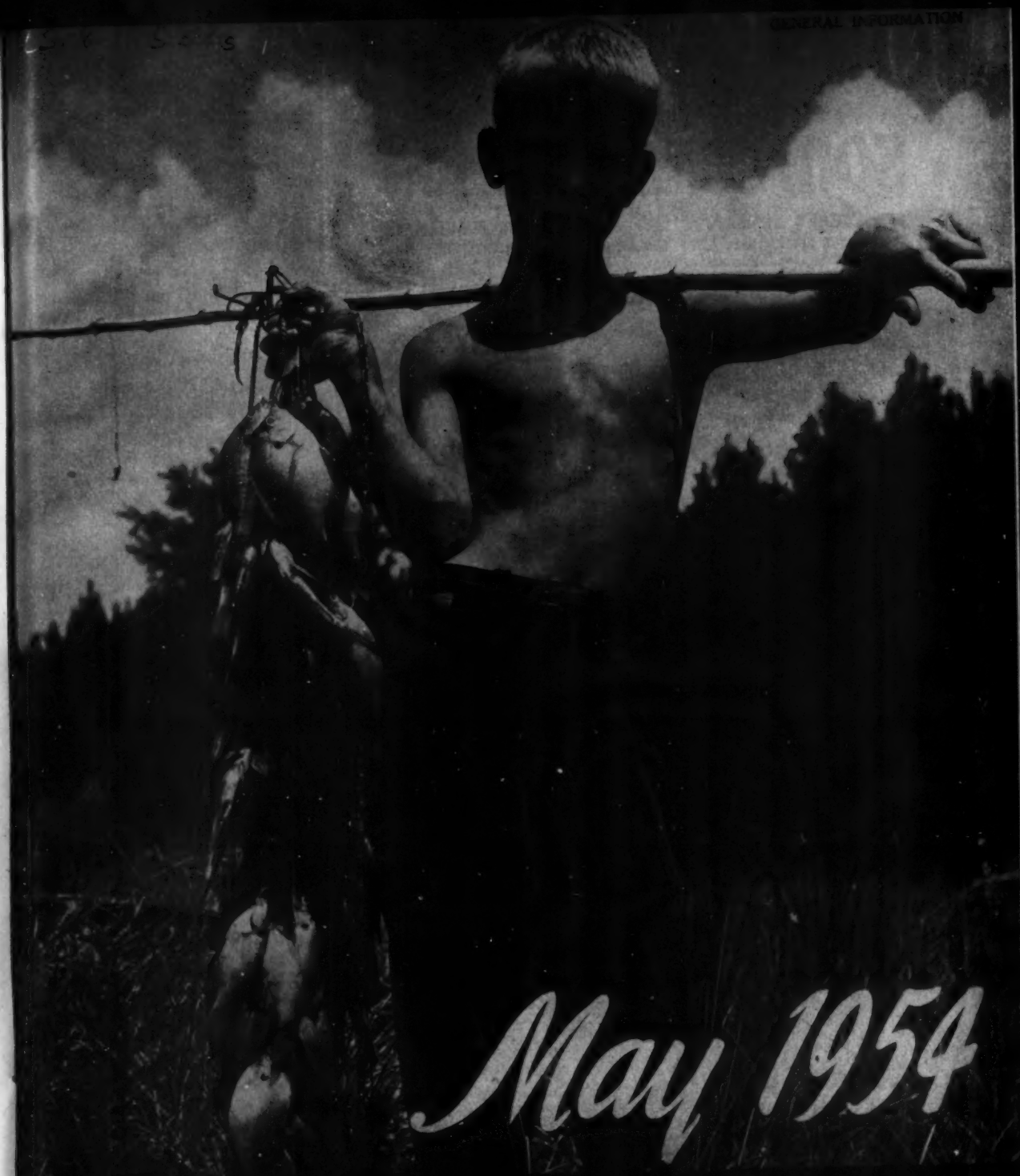

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SECRETARY OF AGRICULTURE

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ADMINISTRATOR, SOIL CONSERVATION SERVICE

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★ THIS MONTH ★

	PAGE
LET US BE PROUD By Mrs. W. L. Spears	219
THE ARKANSAS FARMER OF 1953	220
TALL GRASS WHERE LAND WAS BARE By Earl B. Spendlove	221
BOYS' STATE STUDIES CONSERVATION By Willis D. Moreland	222
TWENTY FARMERS HARNESS UNRULY STREAMS By Herb Boddy	225
MEMORIAL TO A CONSERVATIONIST By Q. S. Peterson	226
THE GREATEST SIGNBOARDS ON EARTH By Robert B. Branstead	228
FRIENDLY HANDS ACROSS THE SEA	234
LANCASTER BANKS ITS WATER By Joe B. Earle	235
STATE'S YOUNGEST DISTRICT TAKES TOP LAURELS By Don Davis and Bud F. A. Svalberg	236

WELLINGTON BRINK
Editor

SOIL CONSERVATION is published by direction of the Secretary of Agriculture as administrative information required for proper transaction of the public business, under approval (August 6, 1951) of the Director of the Budget. SOIL CONSERVATION supplies information for workers of the Department of Agriculture and others engaged in soil conservation.

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HANDBOOK FOR TEACHING CONSERVATION.—The conservation committee of the National Association of Biology Teachers has decided to extend their committee beyond the 3-year period covered by the $10,000 grant-in-aid by the American Nature Association which expires this June.

The committee will soon complete the compilation and editing of over 150 projects from 30 states submitted by state committees. The "Handbook for Teaching Conservation and Resource-use" containing these descriptions will be published by the Interstate Press at Danville, Ill., this year.

The committee has also reprinted an 8-page "Symposium on Training the Conservation Worker" which resulted from a cooperative project with The American Institute of Biological Sciences.

The Bibliography of "Free and Inexpensive Materials in Conservation Education" by Muriel Beuschlein is being revised contemplating a second printing this year.

The symposium reprint and the bibliographies are available for 10 cents each from Dr. Richard L. Weaver, project leader, P. O. Box 2073, Ann Arbor, Mich.

FRONT COVER.—Frank Wilson and a fine string of bream which he caught last year in Olin Helms' pond, near Lancaster, S. C. This pond serves a multitude of purposes, among others the irrigation of bottom land corn. Photo by J. B. Earle. (See Earle's article on page 235.)

All orders go to the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Let Us Be Proud . . .

By MRS. W. L. SPEARS

This farm woman who comes from Route 4, Okmulgee, Okla., made a speech last year which won the annual contest sponsored by the Spencer Chemical Company and the National Association of Soil Conservation Districts. Among her awards were a check for $1,000 *and a trip to the* 1954 *Convention of the NASCD. Her talk was entitled "Democracy at Work in My Soil Conservation District." Part of it we quote—*

CONSERVATIONISTS long ago realized that you cannot save land without also saving and managing water, so special attention was given our water-management problem. If a sudden flood washes away homes and soil, if human lives and livestock are lost, if newspaper headlines blaze forth the story, the very drama of the tragedy arouses everyone to action.

But our water management problem was not so easy. Ours was the undramatic, easily ignored one of insidious wind and water erosion. It is very easy for the average farmer to say, "Why should I be alarmed about a little gully in my cornfield?" But let's follow one little gully.

Rain and wind aggravated it and it grew. It reached the farmhouse and swallowed the sink with running water the farmer's wife might have had. It swept away the dream the farm boy had of going to college. It touched the rural school and the country church and left both emptier and more forlorn. It moved to the door of the city merchant, engulfing part of his profits, since farm customers had once accounted for 60 percent of his trade.

An undramatic little gully, but multiplied by thousands, it presented a frightening picture, a picture that through education and on-site technical assistance had to be given the farmers of my district before they could be aroused to action. So well have our supervisors and Soil Conservation Service technicians presented it that, since 1941, 35,000 acres have been contour farmed, almost 30,000 acres have cover crops each year, over 1,600 miles of terraces have been built, and over 700 farm ponds have been constructed.

In solving this water-management problem, we farmers have learned to work together for the good of all. Many of our terraces, drainage ditches, and waterways cross boundary lines and serve a group of farms in one conservation unit, for we have learned that no farmer ever alone owns a gully or the silt-laden water from an unterraced field.

* * *

Democracy can thrive when each citizen is alert to seize every opportunity for betterment and then is willing to share with others. Our growing season had been a good one. On a ranch in my district, a fine crop of bluestem grass seed had been set, seed that could rebuild old pastures and start new ones. Word was passed around, and men and combines moved in. Before they had moved out, over 12,000 pounds of seed had been harvested by our supervisors, and then, through the efforts of district cooperators, a total of 300,000 pounds was secured, to be sold at cost to all who needed it. Again, democracy at work in my Soil Conservation District.

Democracy demands unity in action. The telephone rings and a voice cries, excitedly, "Get set! Leo's pasture is afire!" Immediately, that farmer's tractor is started and is on its way, its tank of water and pump bumping along behind. From all directions they come, some with pumps and others with equipment furnished by the State Division of Forestry, these conservation-minded men who knew

(Continued on page 233)

The Arkansas Farmer of 1953

***By special permission, we reprint part of an article which appeared originally in* The Arkansas Farmer.**

"EDGAR A. HODSON, agronomist with the Soil Conservation Service, is 'The Arkansas Farmer of 1953.'

"Your state farm magazine asked a large group of key agricultural leaders all over Arkansas to select the man who they felt had made the greatest contribution to Arkansas agriculture during the year. The votes were tabulated and *The Arkansas Farmer* is glad to salute Mr. Hodson as The Arkansas Farmer of 1953. We congratulate him on his fine work in the development of a practical soil conservation program for the average farm in Arkansas. Mr. Hodson has worked with field personnel and soil conservation district co-operators in establishing a complete pasture program that will, in addition to protecting the land from soil and water losses, provide adequate year-round forage for livestock. He has given special attention to production of soil protecting crops that are best adapted for use in Arkansas and on the individual farm. He has helped to establish good pastures on unused land or land too badly eroded for clean-tilled crops, as well as helping with crop rotation systems and fertilization. Our rapidly developing livestock industry owes a great deal to Mr. Hodson and other agricultural workers who have helped make Arkansas a top pasture state.

"Mr. Hodson was reared on a farm in the Tennessee River Valley in northern Alabama. He received his B. S. degree in agronomy at Auburn, Ala., in 1911. He was then an instructor in field crops at North Carolina State Agricultural College for 5 years, where he received his M. S. degree in 1914. He did one year of graduate work at Cornell in agronomy and genetics, and then served in the photographic division of the U. S. Air Force in World War I. Mr. Hodson was marketing specialist with the Arkansas Agricultural Extension Service for 5 years and Agricultural Agent with the Missouri Pacific Railroad for 9 years. He has been with the Soil Conservation Service since 1935—first as Regional Agronomist with headquarters at Fort Worth and then as State Conservationist in Arkansas. He has worked with Soil Conservation Service field personnel since 1948. He spent a month in England in 1949, some time in Argentina and Brazil in 1950, and a month in New Zealand in 1952, studying the establishment and management of permanent pasture. Mr. Hodson has been untiring in his study of better pastures and in his efforts to help Arkansas farmers establish them."

Edgar A. Hodson.

WINDBREAKS DOUBLE YIELD.—M. M. Mulrennan, of the Hillsborough (Fla.) Soil Conservation District got twice the yield of cantaloupes from a field where strips of sweet yellow lupine were used as a windbreak, as compared with similar fields of the same soil type where no windbreak was used, reports E. E. Carter, president of the Florida Association of Soil Conservation Districts.

As an indication of the production of lupine seed, Carter points out that the Santa Fe Soil Conservation District estimates the value of lupine seed processed in their plant this year at $100,000.

Tall Grass Where Land Was Bare

By EARL B. SPENDLOVE

"THERE'LL never be much grass on this place, an' I kin eat all that'll grow on them ridges," an old cowpuncher told Marcellus Johnson.

The time was 1918. The place, a homestead that Johnson had just taken up on the Glendale Bench in southern Utah.

From all appearances, the cowhand was right. Stock had trailed over this particular area for years on their way to and from the winter ranges in Arizona and the summer ranges in the mountains of southern Utah. Grass was a scarce item and most of the drainages were cut by a deep, steep-sided gully.

Thirty-five years of conservative use has changed the scene. If the cowboy were alive today, the knees of his levis would get mighty thin before he had eaten all the grass on "them ridges."

When he homesteaded the place, Johnson realized that it was in poor condition. He had examined the land, however. In the bottoms the soil was deep and fertile. On the ridges there was less soil, but enough to grow native grasses under proper management. The plan was to break up and farm the areas where corn and small grain could be planted. The rest of the land, Johnson reasoned, would take care of itself if it were grazed only in the fall after and before the snow got so deep that the stock had to be moved to his farm at Glendale.

As the years went by this plan proved successful. What had appeared to be dead grass roots began to green up. These first plants were few and far between, low in vigor, producing little or no forage that could be harvested by livestock.

After several years of conservative use, the old plants became more thrifty and new ones showed up. Both new plants and old had to compete with a thick stand of sagebrush. But as the grass increased in vitality, the vigor of the brush declined until it is now actually dying in many places. Even

Much of the seed that Johnson uses on his rangeland comes from seed plots on odd areas on his irrigated farm.

NOTE.—The author is soil conservationist, Soil Conservation Service, Kanab, Utah.

the bottoms of raw gullies are grassed over and lack several feet of being as deep as formerly.

Most of the big herds that used to trail through the area have literally eaten themselves out of existence. Much of the range is fenced and there is less heavy grazing. This has brought about a general improvement of range in this locality, but none of the surrounding land with similar capability will compare with the Johnson place. Blue grama and Galleta are about the only species of grass found in any abundance on adjacent range, either public or private. On Johnson's land these grasses are found intermixed with such species as western and slender wheatgrass, Indian ricegrass, needlegrass, and several species of dropseed.

Although there is an abundance of feed being produced, Johnson makes it a point to leave as much grass on the land as the stock removes. Some stockmen who have seen his range at the end of the grazing season have criticized the "waste" of feed. He patiently explains that the grass left on the ground isn't wasted, but that it helps to maintain soil fertility, catches snow in the winter, reduces soil and moisture loss by preventing runoff and evaporation, and helps to prevent extremes in soil temperature. If the observer still remains unconvinced, Johnson points out that in spite of the fact that he has "wasted" half the grass, his land has fed more cows per acre than similar ranges where all the feed was taken.

Everyone who sees the Johnson range admits that it ranks with the best they have seen, but most of them ask if 35 years isn't a long time to wait. Johnson heartily agrees with them and states that with the grasses that have come out in the past 10 or 15 years it is foolish to wait for depleted ranges to come back. To prove this statement, he can show areas that have been brought back into production in a few years by seeding adapted grasses and legumes where the brush has been removed by burning. The grasses he favors for this area where the elevation is 6,500 feet and the rainfall 16 inches are: smooth brome, orchardgrass, and crested, tall, intermediate and stiffhair wheatgrasses. These grasses have done so well that he plans eventually to put into grass the land that he is now dry farming. Much of the seed that he uses comes from seed plots on odd areas on his irrigated farm.

Johnson has always been a leader in soil and moisture conservation in Kane County. He was one of the first to work out a conservation plan with the Kane County Soil Conservation District. He was chairman of the old AAA committee when it started back in 1936. He has continued in this office or its successors and is the present head of the county ASC committee. He is well liked because he is interested in improving the country, and because he insists upon a dollar's worth of conservation for every dollar paid out.

Boys' State Studies Conservation

By WILLIS D. MORELAND

In recent years, there has been increased interest in the supervised study of natural resources in our Nebraska schools. We also have found ways to supplement the classroom in teaching young people why and how to conserve our natural resources, particularly our soil and water. One of the new approaches to conservation education was used recently in connection with the American Legion's Boys' State citizenship training program, which was held at the University of Nebraska and attended by over 300 high school boys from every county.

In a study conducted nearly 2 years ago, Cornhusker Boys' State leaders were determined to find a better way to serve the cause of citizenship. It was felt that one of the primary requisites of a good citizen in a democracy is an awareness of basic issues and problems. With this in mind, the Board of Directors of Cornhusker Boys' State decided to incorporate a new activity in the citizenship training program. Thus, a new program, "Nebraska Problems Study" was developed. Its purpose is to give participants at Boys' State an opportunity to make an intensive study of some of the major problems confronting Nebraska.

Note.—The author is associate director, Nebraska Citizenship Education Project, Teachers College, University of Nebraska.

Consultants to "State" review reference materials: Leo Geier, A. G. Spohnheimer, Evan A. Hartman, and Willis D. Moreland.

As before, citizenship training is still the nucleus of the total program and is designed to give high school boys realistic concepts of the functions of local and state government. And as usual, the week-long program is culminated by a mock election of boys to political offices where they gain firsthand knowledge of the duties and responsibilities of elected officials in the operation of government.

The major topic chosen for the "problem study" was conservation of the State's soil and water resources. There were several reasons why this topic was selected. First, a survey of the participants at Boys' State indicated that they considered soil conservation to be the most important single problem that needed to be studied. Second, the recent devastating floods along the Missouri and other rivers had made Nebraskans acutely aware of the urgent need for conservation treatment of watersheds. Furthermore, interest was running high in a bill then before the unicameral legislature which would permit the diversion of water from one watershed to another. For these reasons, it seemed that the problem of soil and water conservation would be extremely pertinent for the consideration of Boys' State.

A first step in preparing the "problem study" was the selection of materials to be included in a study packet to be sent to the boys prior to the opening of Boys' State. We tried to include pamphlets and brochures which would represent some of the more important organizations concerned with soil and water conservation. As much as possible, we tried to present a variety of viewpoints regarding soil and water conservation measures.

These materials were distributed approximately a month before the beginning of Boys' State, thus allowing time for study as well as an opportunity to obtain opinions from local people on flood control and soil and water conservation. It is important to note that a high percentage of the Boys' State delegates, as revealed by objective tests upon arrival at the university and later discussions, came to the "problems study" sessions with a good working knowledge of the basic references. They were also capable of reflecting not only their own opinions, but also the views of people from their own communities.

At the conclusion of Boys' State, each participant was requested to donate his reference materials on conservation to his local high school library. This

will provide over 300 high schools of the State with basic materials on conservation for study by future students.

Two afternoon sessions were devoted to discussion of conservation. The Boys' State participants were divided into 12 groups of about 25 boys each. Each group was directed by an experienced high school social studies teacher. The latter—not a specialist in the field of conservation—was chosen for ability to work with boys of this age group and for skill in handling discussions. Discussion was not to involve a technical study of conservation but rather a free exchange of ideas by citizens interested in saving the basic resources of the State. The purpose of the discussion groups was not to indoctrinate the boys in any pre-conceived viewpoint, but rather to provide an atmosphere in which the boys could better understand conservation problems and their solution.

In order that the technical aspects of conservation could be dealt with on the spot, selected resource people were invited to attend. Representatives of the Soil Conservation Service, the University of Nebraska College of Agriculture, and the Salt-Wahoo Watershed Association were present to help the discussion leaders answer questions calling for a more thorough knowledge of erosion, flood control and conservation problems.

The discussion leaders had no prepared outlines, a fact which made for greater independence of thought and permitted a wider range of topics throughout the 12 discussion groups. Some problems arose which were too broad for a lengthy consideration, but even with these the boys gained some new insights.

Some of the more important questions under focus were:

1. How can we enlist the support of everyone in carrying out better land use measures to conserve our soil and water resources?
2. What soil and water conservation measures are needed in our State to decrease the threat of floods and to curb erosion?
3. Should the people of Nebraska support a Missouri Valley Authority?
4. What financial assistance should be given to farmers for establishing permanent soil and water conserving measures?
5. Should the study of conservation be compulsory for all Nebraska high school students?

These and many closely related topics were handled. Almost all of the boys entered into the discussions. Many of them were influenced by the persuasion of other boys.

As a follow-up, the boys prepared legislative bills on various aspects of conservation which were to be introduced in the Boys' State legislature for discussion and action. This led to the weighing of conservation from the legislative point of view, and was a natural and effective culmination of the "problems study."

Jerry Rigg, 1953 governor of Cornhusker Boys' State.

To summarize: The youth of Nebraska have gained a better understanding of the conservation problems in the State. A number of boys said that this experience gave them for the first time a real understanding of the importance of conserving soil and water resources, and of how these resources are related to the present and future welfare of the State. City youth, as well as rural, went home with a better understanding of the various soil and water conservation practices which could be carried on in their own communities.

The boys were almost unanimous in favoring the required study of conservation in high schools. They were so convinced of the urgent need for conservation that they felt all youth in the State should have an understanding of conservation's fundamentals. They were equally emphatic about the need for keeping control of conservation in local hands, although they felt that it should receive consider-

(Continued on page 239)

Twenty Farmers Harness Unruly Streams

By HERB BODDY

W. G. Scott, SCS technician, stands on gravel deposition in Dry Creek channel running through the farm of Montabane Bros. near Tully road culvert. The apricot orchard at the right was inundated and suffered considerable deposition during the rainy season of 1951-52.

CONSERVATION FARMERS cracked down on the soil-eroding, farm-flooding and crop-busting forays of two of Central Santa Clara County's most wayward channels this summer.

The streams—Silver and Lower Dry Creeks—in the Bay area of California, have long been "bad actors." Every farmer who has tried to work the soil along their course, knows what a headache they can be. Year after year, they have scoured, gullied and waterlogged large chunks of good farm acreage. Working as a team, the creeks pose a tough hurdle to the development of some 20 farms.

No one knows how long the rampaging channels have been whacking away at the fertile slopes and valley floor lands. Some years the streams merely inch in a little. Other seasons, like those of '51 and '52 when there were damaging winter floods, gave farmers their biggest scare.

They had plenty of reason to worry at such times. A tide of water, heading from the Mt. Hamilton range, swelled Silver Creek, causing water to pour over some 400 acres. And when runoff from the Lower Dry Creek watershed got out of hand, it gave 200 acres of grain and orchardland their worst wetting in a decade.

Even in normal times, a good part of the Silver Creek section of the Santa Clara basin was too wet to till. Most of the farmers who took a chance and sowed crops had them drowned out. The best performers were meadow hay and native pasture. With luck, there could be as many as 4 months of second-class feed.

On the slopes, above the valley floor, orchardists and grain growers had to cope with winter downpours and "flash rains."

Last winter, for example, runoff brought devas-

tating soil and crop losses to uplanders. Tree roots were laid bare. Silt often piled up to the crotch. Some trees were washed away. Fruit and nut yields dropped. Too much water caused a sharp lowering of soil fertility in some spots. But one of the storm's meanest tricks was to spread a thick gravel blanket over a large piece of good soil. The runoffs of December, January and March were so power-packed, they even skimmed off soil-holding cover crops.

Could Silver Creek be harnessed? Was there a safe way to live with runoff?

The grim group of farmers who met with directors of the Evergreen Soil Conservation District decided to find out. All agreed it was high time to put a stop to the creeks' capers before another winter rolled around.

Glen E. Brown, of the Evergreen district headquarters of the Soil Conservation Service, told the farmers and directors that the drainage job couldn't be done single-handed by one farmer, nor by either the Silver or Dry Creek communities alone. It was the kind of job, he said, that called for cooperative effort on the part of all farmers in the trouble area.

That was the beginning of the first cooperative "group action" soil conservation project in the Santa Clara Valley. Farmers pitched in to get the drainage work done in accordance with the needs of the land and the principles of sound, comprehensive conservation planning. Soil Conservation Service technicians surveyed the channels and laid out specifications for their deepening and widening. When the farmers got around to figuring expenses, they found the Production and Marketing Administration was in a position to pay more than two-thirds of the overall cost.

Today, the channels are fast changing shape. When the creek-improvement program is complete, farmers hope their water troubles will be over. The first heavy rains will tell.

But farmers like Joe Lopes, a leader in the Silver Creek group, and Jim Carlin and Al Martin, who have led the movement in the Upper Dry Creek area, see better times ahead for the 20 farmers concerned. Lopes anticipates that farmers will make as much as 10 times as much money. Instead of tussocks, cattails and swampgrass, he looks for a swing into profitable new crops like sugar beets, vegetables, and high-grade, irrigated pasture.

Now that word of the Silver and Dry Creek drainage work has got around, some 15 to 20 other farmers are thinking about using the group-action method to settle farm problems common to all.

Memorial to a Conservationist

By Q. S. PETERSON

"ENTERING DICKINSON SOIL CONSERVATION DISTRICT"—This sign in bold letters greets travelers wherever a main road enters Dickinson County, Mich. The signs are memorials to a man who gave himself unstintingly to a cause which he knew was important to the future well-being of his country—the conservation of its soil.

Dedication of the markers to the memory of Robert Hazelberg was made December 9, 1953 at a meeting in Iron Mountain. All soil conservation district directors in the Upper Peninsula attended, along with SCS technicians and county agents.

This story of Bob begins in the winter of 1947 when the County Land Use Planning Committee requested the Conservation Institute of Michigan State College to make a survey of erosion taking place in Dickinson County. C. A. Engberg, state soil scientist of the Soil Conservation Service, and George Hurrell, specialist in land use planning, made the survey. To the amazement of everyone, they found that in the short space of 35 years of farming the county had actually lost 25 percent of its topsoil. Farm and city folks alike, realizing that agricultural production is dependent on quantity and quality of topsoil, decided that here was a problem that must be solved and that the best way to solve it was by organizing a soil conservation district. A referendum in the fall of 1948 resulted in a vote of 216 to 1 in favor of the creation of a district.

NOTE.—The author is work unit conservationist, Soil Conservation Service, Iron Mountain, Mich.

The late Robert Hazelberg.

Bob Hazelberg was elected to the first board of directors. Other members were Joseph Trepanier, Clarence Blomquist, Harold Anderson and William Nicholson, all local farmers. Bob, a graduate of the University of Wisconsin, was an instructor at the Veterans Institute at Felch and also owned and operated a 160-acre farm at Sagola.

He not only was interested in conservation but also eager to acquire a greater knowledge of how soils, rotations, fertilizers, vegetation and mechanical soil conservation practices fit together to make a sound, economical land use program. He was one of the first to apply to the Dickinson Soil Conservation District for assistance in developing a complete soil and water conservation plan on his own place.

From the very beginning Bob's willingness to devote freely of his time, his enthusiasm, his energy and his firsthand knowledge of conservation problems, contributed tremendously to the successful operation of the district. Being such a likable fellow with an honest forthright personality, he inspired confidence among everyone.

He took a leading part in all district activities, including the largest land clearing demonstration this area had ever known. He assisted his neighbors and the veterans in his classes to do conservation farming.

On January 6, 1950, we received the news of Robert Hazelberg's untimely death. Bob and his wife, Virginia, had been living in a small log cabin. Planning on making their permanent home in this north country they loved so well, Bob had been working in off hours building a new and larger house. It was when he was in the forest cutting timbers for their new home that he suffered a fatal heart attack. He was still in his early thirties.

Friends and neighbors got together and completed the home after Bob's death. That's the way folks felt about the Hazelbergs. Then the district directors, Soil Conservation Service and Extension workers in the county gave Virginia $25 to use as a a memorial of her choosing. A few days later they received a letter of appreciation from Virginia telling how Bob had so often talked about soil conservation and how deeply interested he was in it. She could, therefore, think of no more fitting memorial than to turn the money back to the directors to use as they saw fit.

For some time prior to his death, Bob had felt that soil conservation and the work that was being done in districts should be brought to public attention more forcibly. With this in mind, the district directors decided to set aside the money to be used for signs which would proclaim that here are farmers who recognize soil erosion and are doing something about it.

Month by month pennies and dollars were added to the fund. In 1953, through the cooperation of the Marquette Prison, which arranged to build the signs at cost, and the Dickinson County Road Commission, which assisted in erecting them, they were put in place where each State and Federal highway enters the county. Everyone who had even the smallest hand in the project is justifiably proud of the signs and the cause for which they stand. And most of all, they are proud of Robert J. Hazelberg and the imprint he left on this community.

But there are other more permanent memorials; the conservation practices that can be seen throughout the district.

The Greatest Signboards on Earth

By ROBERT B. BRANSTEAD

ACROSS the Great Plains, the fertile valleys of the East, the North and the South, and the irrigated deserts of the West, farmers are painting great signboards of their faith in soil conservation. They are making their drawings with the broad strokes of the plow and disk and coloring them with the greens of growing crops and the yellows of straw mulch. Who will tell you this? Any airline pilot who makes his daily run between here and there in these United States; to him they are the signs of spring and fall just as you or I watch the blossoms or coloring leaves.

But the patterns of conservation may be 'old stuff' to the pilot. It is to the occasional air traveler that the strips and curves are a source of wonder and interest.

"Why are all those fields down there cut up in long parallel strips, and why do all the farmers run their strips in the same direction?"

"Look at that farm, just below the tip of the wing! They must be real snug. That windbreak is on three sides of his buildings."

Such are the comments of fellow passengers when you fly.

The tiny speck of silver with the quiet drone high in the sky contains many pairs of searching eyes. There is little privacy left to the farmers for what he does with his land all can see. You may not be on a regular air route; however, planes vary their flight to catch the favorable winds and will pass over from time to time.

On a round trip flight between the west coast and Washington, D. C. you have an unusual opportunity to see the way America farms. The plane climbs over Fort land, Oreg. and straightens out at 17,000 fe ding eas toward Salt Lake City. Below and not so far a or you ar a bare 3 miles in the air, the Columbia River spr boundary line between Washington State and Oregon. tersectin valleys that mark the rugged Cascades disappea the broa plains of wheat and grassland take their place. and there you see strange white breaks in the earth m that look just like the seat of a boy's trousers, threadba m sliding

NOTE.—The author is in the information division, Soil Conservation Service, Washington, D. C.

Lovely from the air, these rolling foothills in the c range ea of the Salinas Valley in California suffer from vast-e osion—th result of 400 years of overgrazing by live

To the right is a contrast in beauty: An Ohio terra tected an at peace; stripcrops, a contour motif, with the soil anchore under vegetation and trees.

down too many hills. These spots are sand dunes, small but active, and caused by years of overgrazing.

As you near the wheat country around Pendleton, you see that farmers are beginning to do something about the wind damage with which they are threatened. Strips of grain and fallow are breaking up the broad block patterns of the past.

On into southern Idaho, a land of milk and honey, where glistening canals of water squiggle their way on the contour, bringing water to every little farm and field. Here windbreaks are the most prominent feature from the air. But here and there little white spots can be seen in the dark green of alfalfa or beanfields. These are caused by alkali from the overuse of water.

When the plane leaves the path of the Snake River it flies high over the mountainous country

surrounding the Great Salt Lake, higher still over the Rockies, that rugged spiny extrusion which caused so much delay to western migrations of a century ago; then it drops down in this wildness, to the pleasant city of Denver. Farmers in eastern Colorado take good care of their land. You can say that without ever speaking to one of them or even being on the ground. Just look down as you fly. Stripcropping patterns are everywhere, and as the land demands it you will also see terraces or diversions, contour barriers to rapid runoff.

All sorts of things are going on here in the southwestern corner of Nebraska: terracing, contour plowing, and you can even make out a series of detention dams on the stream at the bottom of the photo.

Slowly almost without your being aware of it, the land begins to change. You look down and say to yourself, "What has gone wrong?" The strips are gone. Only a few terraces are to be seen, while in the sharp contracts of the later afternoon a fine network of veins appear as though the skin had been torn away from the flesh. You pick one out and trace its course through a maze of twisting branches. The veins join and get bigger. They become a main channel to be lost from sight under the belly of the plane. You learn later that this is an area of very sandy soil and farmers here are having a tough time holding the land in place.

Now the time zones are catching up with you. It's beginning to get dark. The pattern of the land becomes hazy. Scattered clouds move crazily below like sheep with a dog at their tail. A big city comes into view. From the map you think it is Omaha and ask your seat mate. "Yes" he says, and points out its salient features as though he knew it well. A few minutes further on you see another city, this one much bigger that the last. And while you and your friend are puzzling over it the PA system

The lordly Mount Shasta, symbolic of the snow storage which is of such vital importance to the farmers of many western states.

starts to squawk. The reassuring voice of the pilot tells you "We are now flying over Kansas City, Missouri. The plane has changed course to gain the speed of more favorable tail winds." Night comes swiftly and you are diverted from watching the twinkling lights by the stewardess taking your order for dinner. The rest of the trip to Washington is made in the dark, while you wonder what lies below.

Looking down from the clouds at downtown Chicago: great marketing and transportation center, a powerful partner of the agricultural industry.

The return trip gives you more daylight, 3 hours more. The gleaming white buildings of the Capitol become a pleasant memory in your mind's eye, blending with the dark green of cutover fields and broadleaf forest regrowth. You feel a little nervous because the plane is flying so low. Then you realize that the Alleghenies and the Appalachians, the mountain chains of the Eastern States are much lower than those of the West. Cloud banks which have prevented your seeing the ground begin to dissipate as you travel through Ohio and Indiana. Below are small towns and villages and the railroad winding back and forth. Then you see for the first time those beautiful contour patterns on the hillsides. Strips curve around the slopes, rows and rows of them. You see drainage ditches in the bottom lands. Everything is green except for the newly plowed soil of a red tint.

Beyond Chicago the clouds once more blot the earth from view. You try to calculate when you are going to pass over the broad Mississippi, but you never do see it. The air clears slowly. Below are fields of corn and as the land becomes more rolling terraces appear. Everyone is using them. Farmers seem to know what is good for their farms. You are traveling a more northerly route this time and you do recognize Omaha when you pass over it. You follow the Platte river—a wide meandering stream. Even from the air you have the feeling that you could wade it without going over your shoe tops. It is filled with sandbars and moves in a wide path over the countryside. Where did the sand come from? You are sure you know.

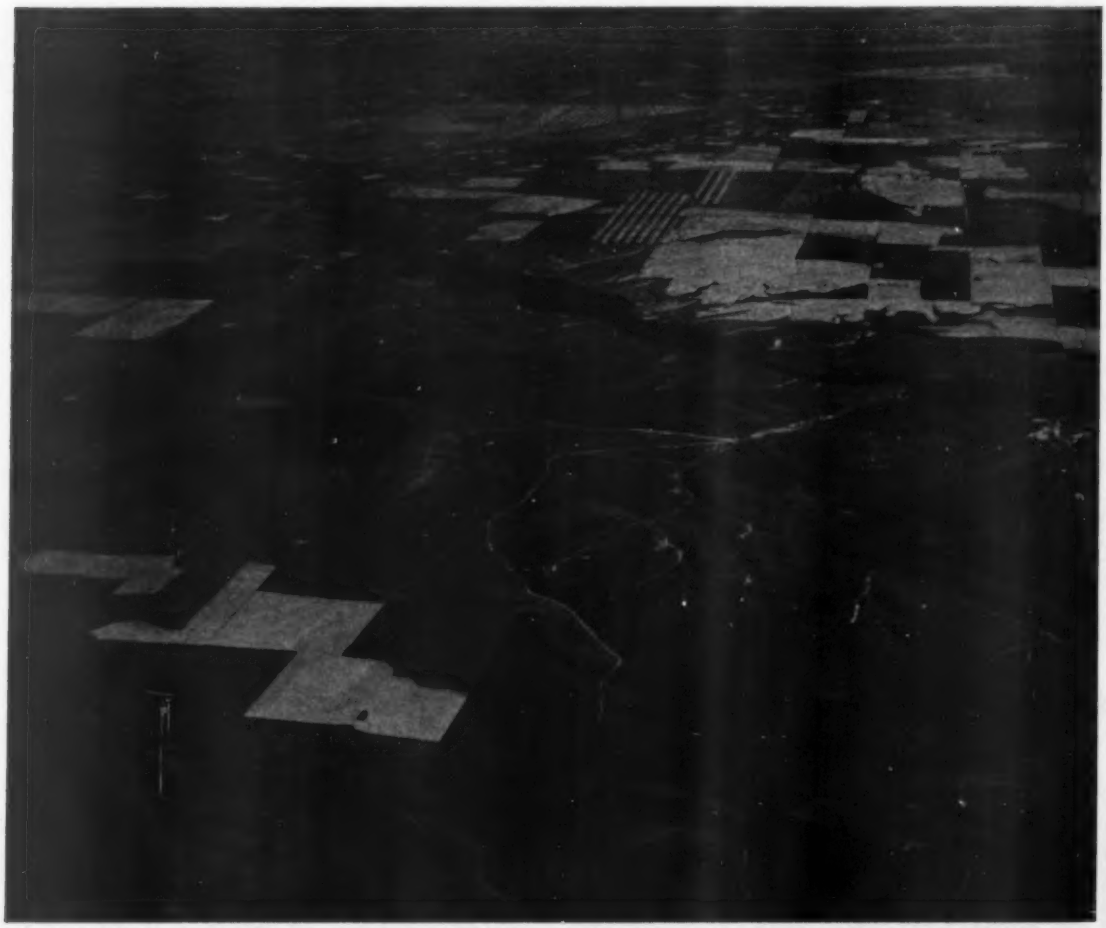
The plane starts to climb as you leave Denver for Los Angeles. Higher and higher it goes. You know that the mountains are in the 14,000 foot class and wonder if you are ever going to get over the

tops of them, but you do. You go on up to 17 then 19 then even 21,000 feet. Below, the peaks spread out in all directions. Some are snowcapped, others a desolate brown. Off to the south you see a storm darkening the sky and sending down occasional jagged streaks of brilliance. The farmland is gone. The terrain is so rough that you wonder if there is any range useable for cattle. Erosion here is on a grand scale, nature's way of cutting down mountains young in geological time, to build up the more fertile bottom lands of thousands of years hence.

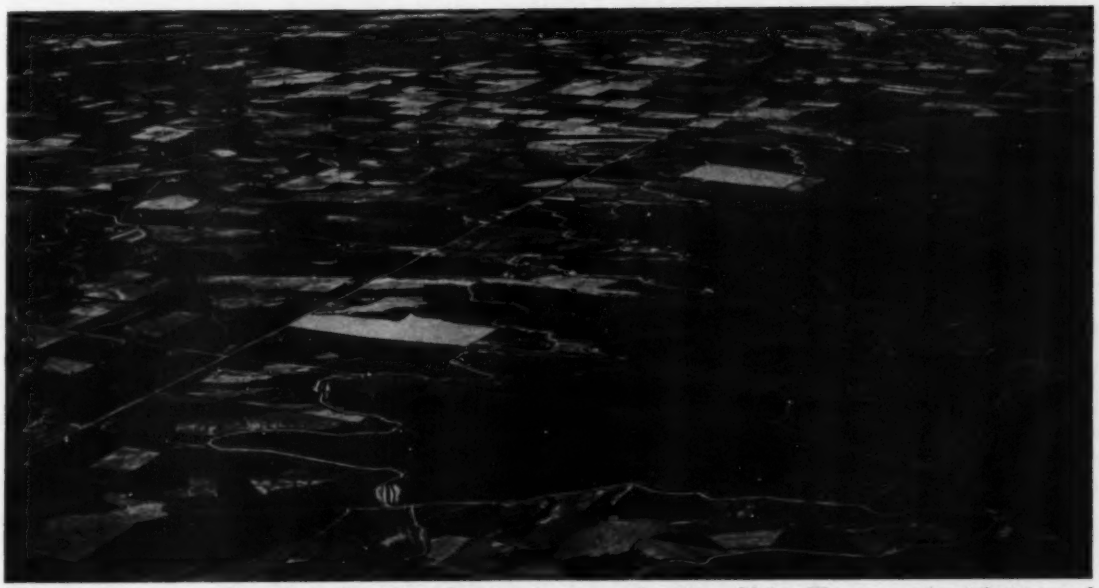
The cliffs of sandstone stand red in the afternoon sun as you pass over the Gunnison, and there straddling the stream is one spot you can recognize, Grand Junction. A green oasis, where border irrigation of alfalfa has made life tenable. As you follow the sun, a few other green spots and an occasional blue lake, a reservoir, stand prominent in the diastrophism of the desert and the mountains. Las Vegas is below you. You can trace the road beyond to the Spring Mountains and make out where Frenchman Flat lies barren and burned from the atomic blasts that made it famous.

There are the San Gabriel Mountains. Then down you slant in a long slow glide through the fabulous Santa Ana River watershed. Orange groves appear to cover every bit of farmable land. Eucalyptus windbreaks stand row after row between the fields. You watch along the sage covered hills to the north remembering the many floods they have poured into homes and farms from San Bernardino to Pasadena. People live and farm on those dangerous alluvial fans.

When you leave Los Angeles on a later morning,



The eye of the conservationist is quick to note the flags of windstripping (upper-center) in this Oregon panorama.



An interesting pattern of canals in the irrigated farming country of southern Idaho. The area to the right is rugged and impenetrable to the plow.

you are over familiar country. The coastal hills are below where people have tried to grow beans so far up the slopes that the soil washed out like sugar. The annual rangelands overburdened with sheep and cattle from the times of the Spanish missions are scarred and raw. Then farther north the ocean fog rolls in, pocketing the peaks. A girl in the next seat points to it and asks if it is snow. This is her first plane ride. Over the Central Valley the earth is once more visible. Those curious curving marks down there are rice paddies, "See the dry ones, I hear they have to quit growing it after a few years, ruins the land!" You hear the comment and think wisely to yourself, "Yea, alkali."

Mt. Shasta, that great landmark of California, looms up. Its snow covered peak provides the water for the dam you see below. Water for the West, for irrigation, public consumption, hydro-electric power, and a hundred other uses that keeps the land alive.

Beyond Shasta is Oregon and home. You settle down to watch the fir forests of the Cascades and the green fields of the Willamette Valley. Country that has barely known the plow for a hundred years. As the plane swoops down for a landing in Portland, you think back to the signboards you have seen. They were appearing all over the nation. Some you had to know about to see; others were obvious even to the city folk. Some told a story of strength, others of weakness, but altogether they showed a progress toward soil conservation that has come as swiftly as the day of modern air travel.

LET US BE PROUD

(Continued from page 219)

that grass must not be burned and soil left bare. And when that fire is out, those farmers who make up my community's fire-fighting organization have the satisfaction of knowing that men who learn to cooperate to save their land can work together in all that is good and desirable. Again, democracy at work in my Soil Conservation District.

Our Nation does not, perhaps, value its farmers highly enough. But, perhaps, that is because we who live and work on farms do not value ourselves highly enough. Perhaps it is time we should become proud. Proud that from our farms is coming the food that is strengthening democracy around the world. Proud that from our farms have always come most of our Nation's leaders. Proud that we farmers are strong enough and honest enough to admit our past mistakes in the treatment of our soil. But most of all, proud that, in our hearts, we can hear those minute men of 1775 say to us, "Well done! We fought and died to secure this land and to found this democracy. You, in 1954, are fighting as great a battle, to preserve this same land and to strengthen this same democracy. Be proud that you are doing these things in a truly American way, a democratic way."

Friendly Hands Across the Sea

THERE are many interesting magazines in the American Library at Salonica, Greece, but in the opinion of Elli Papadoupoulou, a 16-year-old high school girl, SOIL CONSERVATION Magazine is the best of all.

Browsing in the library, she saw a story in the March 1953 issue of SOIL CONSERVATION Magazine titled, "Junior High School Goes To Camp." The story and pictures of students of the Greenville, S. C., Junior High School studying conservation intrigued her very much.

So Elli wrote a letter to Miss Cena McCurry, the teacher whose picture appeared with a group of students studying how soil is formed from the weathering of rock. And as a result, all the students in her seventh grade class wrote letters to Elli. Many letters have passed between Elli and the students since then and Elli hopes the correspondence will go on "forever."

In her first letter last April, Elli said:

"Dear Miss McCurry:

"My letter undoubtedly will cause you a lot of surprise in its arrival, as it is addressed to you from an unknown student.

"Before I continue my letter, I should like to ask of you to forgive me as I dared to write to you.

"I was so happy to find your address as I was reading an American magazine which is called SOIL CONSERVATION.

"And now I know you will ask me where I found this magazine so far away from his country. Well, dear Miss Cena, here in Salonica there is the American Library where every one of the Greeks can go to read many kinds of American magazines: *Life, Post, American, Boys' Life, American Girl, Time, Newsweek,* and so on.

Elli Papadoupoulou.

"Well, I am one of the American Library too and every day when I have spare time, I enjoy it . . . Believe me that the only magazine I like best is the SOIL CONSERVATION, and every month when arrive the new one I read it with listen.

"Yesterday as I was looking at this magazine I was surprised to read the article, 'Junior High School Goes To Camp.' I saw your picture around your nice looking students and that made me to be sure that you are a useful teacher who helps very much your students.

"Believe me that I was happy and glad to read that article. Please tell your lovely students that they must be happy of having such a good teacher who do always the best for them.

"By the way, I must introduce you now myself. I am a girl of 16 years old. I am also a student in high school . . . "

Imagine Elli's surprise when she got letters from all the boys and girls in the seventh grade class. She could not answer them individually, so she wrote a letter to them all:

"My Best Friends Boys and Girls:

"Your wonderful letters I was received yesterday and really yesterday was the most happiest day I have ever seen.

"I read all your letters line by line and a few of them I read over and over again.

"It was so nice of you to write me and believe me that I appreciate this very much.

"Our postman was so surprised to bring at our house so many letters and today when I met him he said to me, 'Elli, you must be proud of having so many friends in the U. S. A.' . . ."

The original article which served as a link of friendship between Elli and the American students was prepared by J. W. Burdette, then of the Soil Conservation Service and stationed at Spartanburg, S. C.

Lancaster Banks Its Water

By JOE B. EARLE

LANCASTER COUNTY, S. C., has twice as many farm ponds as any other county in the State. There are 26 ponds within one square mile in one part of the county.

Five hundred and sixty-five ponds were completed by cooperators with the Lancaster Soil Conservation District as of June 30, 1953. During last July, August, September and October, 106 more ponds were surveyed by SCS technicians in the county. Eighty-five of these ponds were completed at the end of October.

Olin Helms, a cooperator with the Lancaster Soil Conservation District, produced 185 bushels of corn per acre in 1951 by irrigating with water from his pond. A recent picture of a lad holding a string of fish that reached from his shoulder to the ground, caught in Helms' pond, is good proof that the water is used to provide food and fun as well as irrigation. (Also, it does nicely as a front cover.)

John E. Nisbet, technician, says, "The first pond surveyed by SCS men here was completed in 1942. Interest increased slowly at first but lately by leaps and bounds."

Ponds in this county vary from 1/10 acre in size to 25 acres. All are stocked with bream and bass by the U. S. Fish and Wildlife Service or by the South Carolina Resources Department.

In South Carolina 3,571 farm ponds have been built by district cooperators. Interest is increasing, as indicated by the fact that about a third of the total, 1,067, were built in 1952.

NOTE.—The author is area conservationist, Soil Conservation Service, Chester, S. C.

Farmers have learned to use grass, trees, stubble mulching, contour cultivation and other conservation measures to stop as much water as they can where it falls and store an additional amount in farm ponds for use in irrigation, stock watering, fish production, fire protection, for storing veneer logs, to provide water for spraying agricultural crops and other uses.

Pines and pastures are two of the most important practices in Lancaster County for protecting the watersheds of their farm ponds. Orders for pine seedlings have been placed by cooperators with the Lancaster district for 1,095,000 trees for the planting season of 1953-54. These seedlings will be furnished by the State Commission of Forestry.

Cooperators with the district have also seeded 13,385 acres of permanent pastures.

Farmers and the general public are more and more recognizing that pure water is one of Nature's most precious gifts. Water can be either beneficial or destructive, depending on its use and management. Cooperators with the Lancaster Soil Conservation District in South Carolina are setting an example in managing water for maximum beneficial use.

State's Youngest District Takes Top Laurels

THE best way to hold the soil in place and to store rainfall in the ground, in the Upper Cheyenne River Soil Conservation District in Wyoming, is to grow more and better native grass per arid acre. Good management of native range won first place in the Goodyear Tire and Rubber Co. conservation contest, as well as first place in the Casper *Tribune-Herald's* second annual soil conservation achievement program.

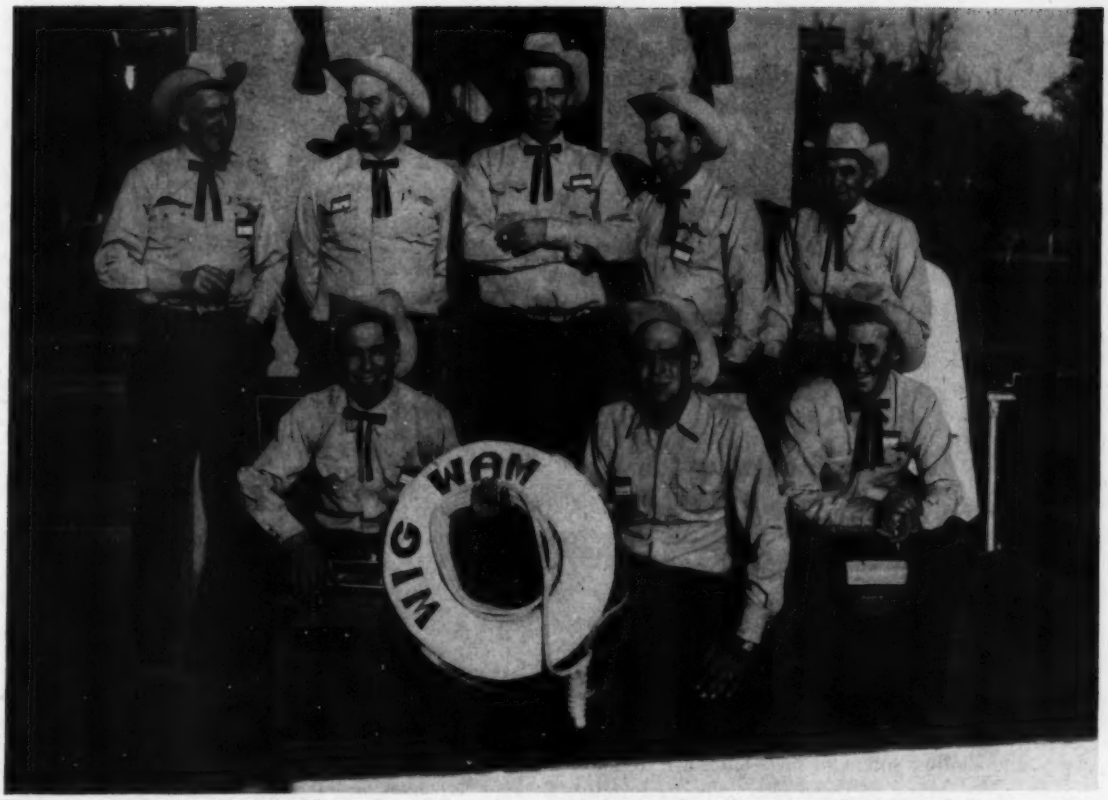
Wyoming's champion soil conservation district is run by District Supervisors Frank L. Kane, chairman, of Gillette; Jin Sherwin, of Douglas; Jack Downs, of Douglas; W. A. Stoddard, of Bill; and Harvey J. Nachtman, of Douglas. The District scored 2,375 points out of a possible 3,000 in judging by three standards—administration, district conservation, and the score on three selected farms or ranches.

Efforts of the supervisors in this newest (18 months) of Wyoming districts contributed greatly to the winning score. There are 1,137,200 acres in the district, of which 630,000 acres are already under agreement by 30 cooperators. Kane states the goal of the district as 85 percent participation by the end of the year. He remarks, "This is a big area. We are dealing with a lot of big cattle and sheep outfits." He notes that both large and small ranches are active in the district program.

Victor Nachtman, a district cooperator engaged in intensive range improvement programs for commercial and pure bred Herefords, emerged with top individual honors. His volume of forage for grazing is being increased each year through a water-spreading program. The systems direct water from small natural drainages and reservoir spillways to low ridges and adjacent areas. Thus, the water is absorbed by the soils before getting back into the draws where it does not benefit forage production. Victor is not one to regard everything green as "grass." He knows his native grasses by name and by growth requirements and manages his grazing accordingly.

The application of conservation through management of grazing is far less spectacular to the uninitiated observer than conservation applied by means of earth-moving equipment and by installation of concrete and steel structures. Range conservation through management of grazing shows largely through the presence of two blades of grass where one grew before, or the presence of two blades of a climax native grass where two blades of an invading grass or weed grew before. And, the latter may not

NOTE.—The authors are range conservationist and work unit conservationist, respectively, Soil Conservation Service, Douglas, Wyo.



Winning supervisors: Seated—Victor J. and Lawrence L. Nachtman, Lee Moore; standing—Frank L. Kane, Jim Sherwin, Jack D. Downs, W. A. Stoddard, and Harvey J. Nachtman.

be very evident from the highway. Yet it is the cheapest and surest way to cash in on what the climate and soils of range country have to offer. More and bigger kinds of grasses reestablish themselves under conservation ranching. That means more of the ground covered, more water soaking into the ground, deeper roots to pump it back out, and more forage being produced while they are pumping. More forage means more cover, and, of course, less erosion and cheaper meat.

Victor and Lawrence Nachtman, first and second place winners, are applying long-time plans toward the day when range conservation will be evident on all their native pastures. They do this by stocking their ranches in balance with the forage and feed supplies that the ranch can produce. Adjustment between pastures takes time. Proper distribution within a pasture often presents knotty problems. They know that native forage plants need about half of the leaf surface left during the growing sea-

By DON DAVIS and BUD F. A. SVALBERG

Management of native grasses builds up the range. Water-spreading, control of livestock numbers, and other measures increase yields of forage.

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son to store food in the roots for the next year's start. They know that it takes green shoots above ground to manufacture the food necessary for roots to grow and reach deep soil moisture. They have learned that some unused forage is not waste on the range, but instead, makes the big rains soak into the ground. For the Nachtmans and other conservation ranchers, a lot of range conservation boils down to "taking half and leaving half." Invariably, the ranges respond with a bigger half to be grazed.

In addition to stocking the pastures so that half the annual production is left, these men follow a practice of resting each of their native pastures every third or fourth growing season. This gives the taller, higher-producing forage plants a chance to grow tall, set seed, and "outcompete" the shorter, lower-producing species, and annuals that are always present. Lawrence Nachtman points out, "When you rest a pasture, it is necessary to remove all of the livestock during the resting period. Otherwise, the draws and areas close to water get used by the few head you might have left in the pasture. That kind of pasture resting doesn't do you much good because the parts that needed the rest the most won't get it."

On Victor's main winter pasture many slopes are steep, and shallow soils and raw shales are common. Heavy rains falling on these soils of limited ability to store moisture causes runoff to collect in draws and cut deep gullies. He said, "I couldn't afford to build enough dams to stop the gullying, but as a result of resting the pasture in summer and leaving some grass after winter grazing, the gullies are losing their steep banks and starting to heal."

Jack Downs, third-place winner, puts it this way: "This is a dry country and we need all the moisture that falls for growing grass. Once in the draws, the runoff water does more damage than good." Jack has built 18 small spreader dams on his Box Creek range to dispense runoff water where it will grow grass instead of rip on down the channel. "Without this spreader system, I would have had to buy all my winter roughage," he said.

These experiences are indicative of the ways that conservation pays, even in low rainfall areas. Here, ranchers and technicians, busy making conservation plans, talk mostly about grasses and livestock numbers, and when to graze various parts of the ranch with various classes of livestock. It takes careful planning to be sure each bunch will have adequate pasturage and roughage 12 months in the year.

BIRD'S EYE LOOK AT CONSERVATION.—Last fall our Grant County (S. Dak.) Soil Conservation District sponsored a conservation air tour. Joining in sponsorship were the Milbank Kiwanis Club and the Milbank Squadron of the Civil Air Patrol assisted by the Soil Conservation Service and the county agent.

The district laid out and listed the practices they wanted the people to see as well as some places where work was needed. *Numbers were put on the fields over the route flown; they were 20 feet high by 4 feet wide and made from lime.*

The Kiwanis Club took care of advertising, printing of tickets, publicity, seating, public address system, insurance and the signing of waivers.

The Civil Air Patrol took charge of flying, handling the crowd at the airport, parking cars, loading and unloading passengers and safety measures at the airport.

Before the actual tour, the people were taken into the hangar and given a briefing. On a map 8 feet high and 18 feet long the route was drawn and the farms numbered.

More than 80 percent of the passengers had never taken a plane ride before. Between 300 and 400 people were at the airport and about 100 persons were taken on half-hour flights. Expenses totaled $227 for gas and oil, insurance, and miscellaneous items.

—JOHN C. NELSON

MODERN CONCEPT OF FLOOD PREVENTION.

—"We have long recognized that flood prevention must begin on the upper watershed where the rain falls and the snow melts.

"Let us not presume, however, that upper watershed treatment is the full answer to the Nation's flood problem. Instead, it is the logical beginning.

"Reduction of flood damages, the greater part of which consist of agricultural losses on the upper watersheds, must of necessity involve downstream improvements. These include such works of improvement as larger reservoirs, levees, dredging and other forms of channel improvement.

"But upstream programs are a necessary part of the entire picture. Such programs can reduce the volume of water pouring out into the main stream channels and in many instances can prolong the life of downstream reservoirs by reducing the amount of silt flowing into them.

"The success of any flood prevention program is dependent entirely upon teamwork. The program must have the wholehearted support and leadership of local people; of local and State agencies.

"For that reason the Department of Agriculture has believed it important to make local sponsorship the first condition of approval for such projects."

—DONALD A. WILLIAMS

Happy occasion: Dean Darlow, Sandy Saunders, his son, Lynn; Governor Murray, Mrs. Saunders.

SANDY SAUNDERS HONORED.—Oklahoma farmers a few weeks ago reversed the procedure and told WKY, WKY-TV farm director Sandy Saunders' story to the State via a special telecast from the surprise "recognition" luncheon given for him in Oklahoma City. Sandy has made outstanding contributions to soil and water conservation over many years.

The luncheon was such a well kept secret that Sandy, who's been telling the farmer's story on WKY since 1946, thought he was going to a business meeting until he walked through the door to face two television cameras, his family, Governor and Mrs. Murray, and a banquet room filled with the leading farmers of the State, all gathered there to give him the State's recognition of his fine work.

Among those present besides the Governor and Mrs. Murray were the toastmaster, Dr. Al Darlow, dean of the school of agriculture at Oklahoma A & M; Pat Johnson and Jimmy Brown of Oklahoma County, representing the 4-H Clubs; Charlsey Mae Fincher, Poteau, representing the Future Homemakers of America; Bart Boronsen, Perry, from the State's Future Farmers of America; Mrs. O. G. Rushing, Shawnee, farm women's clubs; Dale McClain, Elk City, who spoke for the farmers, plus 70 other representatives of farm and industry in Oklahoma.

Then, in a remote telecast from the luncheon, carried on Sandy's "Oklahoma Farmer" show on WKY-TV, Ed Lemmons, director of agricultural information at A & M and Sandy's boss at WKY from 1946-49, narrated, in a take-off on "This Is Your Life," Sandy's story as photographs of his life were flashed on the TV screen.

After his life story was told, Governor Murray presented Sandy a scroll signed by those present "because of our love for you and the fine work you have done."

Thus a grateful State saluted Sandy Saunders.

BOYS' STATE

(Continued from page 224)

able support from the various levels of government. Opinion was almost equally divided as to the desirability of a compulsory conservation program. Those who objected to compelling local people to practice conservation felt that an intense program of education would be a better approach. They were in favor of establishing the study of conservation at all age levels, from kindergarten to adult programs.

Leaders of the University of Nebraska Citizenship Project and Cornhusker Boys' State believe that this program for youth is an important educational move to help people become increasingly aware of Nebraska's urgent need for soil and water conservation. The program's enthusiastic reception by the directors of Boys' State, the discussion leaders and the boys themselves points to its becoming an increasingly important part of the Boys' State program in Nebraska.

Club contestants use a level to determine grade of field.

CLUB MAKES FAST START.—Young 4-H Club members in the schools of Douglas County, Nev., formed a Soil and Water Conservation Club, which in its first year, 1953—Sucessfully completed Nevada's first 4-H Club soil and water conservation project. Saw two of its members, Ernest Johnson and Arnold Settlemeyer, distinguish themselves in the 1953 Firestone Tire & Rubber Company Contest by winning all-expense trips to the 32nd National 4-H Club Congress in Chicago.

Sponsors of the club are Douglas County Extension Service, Carson Valley Soil Conservation District, and Gardnerville office of the Soil Conservation Service. Project leaders were Raymond C. Cox, extension agent, and the late H. Bruce Shaw, soil conservationist.

Shaw and Cox helped the boys work out complete conservation plans for their home farms.

Club members Richard Fox, Carl Spahn, Stephen Hansen, Graham Hollister, Jr., Johnson and Settlemeyer went over their farms acre by acre, and completed conservation plans which were identical in design with those laid out by thousands of adult farmers over the country.

Members attended 10 conservation study meetings and took several field trips.

With the help of the SCS soil scientist and engineer, each boy made a soils and topographic map of his farm. The county agent assisted in planning seedbeds, crop rotations, proper management of pastures, fertilizers, and soil amendments.

Club members learn how to read aerial map. Raymond C. Cox, extension agent, is their mentor.

Each contest entrant completed a scientifically sound plan for conserving the land and water resources of his farm, one acceptable to his parents and the supervisors of the Carson Valley Soil Conservation District.

Ernest Johnson and Arnold Settlemeyer took Douglas County honors among club entries, and then went on to win top State and sectional awards in the National 4-H Soil and Water Conservation Awards Program.

—Herb Boddy